REMARKS

Claims 1 and 21, 23, and 24 are amended. No claims are cancelled or added. Thus, Claims 1, 2, 4-7 and 21-24 are now pending in the application. Each issue raised in the Office Action mailed April 8, 2009 is addressed hereinafter.

I.   ISSUES NOT RELATING TO PRIOR ART – SECTION 101

A.   Claims 1-2, 4-7, 23-24 stand rejected under 35 U.S.C. § 101 as allegedly directed to non-statutory subject matter. Claims 1, 23, and 24, as amended, are performed by one or more processors. These independent method claims are tied to a particular machine, thus satisfying the machine-or-transformation test. The rejected dependent claims are also tied to a particular machine by virtue of their dependency on an independent claim that is tied to a particular machine. Therefore, the rejection is overcome. Reconsideration and withdrawal of the rejection is respectfully requested.

B.   Claim 21 stands rejected under 35 U.S.C. § 101 as allegedly directed to non-statutory subject matter. Claim 21, as amended, is an apparatus claim. Thus, Claim 21 is directed to statutory matter. Therefore, the rejection is overcome. Reconsideration and withdrawal of the rejection is respectfully requested.

C.   Claim 22 stands rejected under 35 U.S.C. § 101 as allegedly directed to non-statutory subject matter. The rejection is respectfully traversed.

The Office Action alleges that Claim 22 recites software per se because the claimed processors are allegedly not described in the specification, and thus may be interpreted as software processes. The Applicant respectfully disagrees.

On page 7, lines 12-14, the Specification states:

"*As a result, **the device 450** operates to allocate the available output bandwidth to the input data streams in a way that follows administrative instructions and bandwidth limitations.*"

On page 7, lines 16-17 the Specification states:

> "The selection of transmission rates is done by the **device 450** and depends on the type of data in the data streams."

Thus, the Specification discloses that device 450 is an actor in the claimed system. On page 6, last paragraph, the Specification discloses that device 450 is a media device 450. On page 5, lines 25-26 state:

> "FIG. 3 shows a **computer device** 300 suitable for use as a **media device** in accordance with the present invention."

Thus, a media device may be implemented on a computer device. In that same paragraph, the Specification discloses that a computer device contains a central processing unit (CPU). On page 6, second paragraph, the Specification discloses that the subsystems within box 400 includes a Central Processing Unit (CPU) 416. A central processing unit is not software. Therefore, Applicant respectfully submits that there is ample support in the specification for a system comprising one or more processors where the processors are understood to be tied to a computer device. Reconsideration and withdrawal of the rejection is respectfully requested.

II.   ISSUES RELATING TO PRIOR ART – SECTION 103 -- CLAIMS 1, 2, 4-7 AND 21-24

Claims 1, 2, 4-7 and 21-24 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over "*Shaffer*" (U.S. Patent 6,757,277) in view of "*Packer*" (U.S. Patent 6,046,980), further in view of "*Vaid*" (U.S. Patent 6,047,322). The rejection is respectfully traversed.

Claim 1

Claim 1 recites in part:

> "determining whether another data stream *from said particular data class* is able to use bandwidth that was allocated to the terminated data stream, and if so, allocating the bandwidth to the other data stream"

The Office Action acknowledges that *Shaffer* does not teach or suggest the quoted feature and does not allege that *Vaid* teaches or suggests the quoted feature. The Office Action relies on *Packer*, col. 13, lines 38-60. The Office Action appears to consider a *flow* in *Packer* as equivalent to the claimed *data stream*. However, the cited passage only describes how to allocate excess bandwidth without considering from which traffic class the bandwidth was freed. In other words, when a flow terminates, the corresponding freed bandwidth is added to a pool and allocated to active flows based on a priority scheme. The subsequent allocation determination does not consider the class of the terminated flow.

Claim 1 further recites:

"**determining a plurality of acceptable transfer rates** for the particular data stream; **negotiating a transfer rate** for the particular data stream from the plurality of acceptable transfer rates"

The Office Action relies on *Shaffer* at Col. 3, lines 6-34 and col. 4, lines 21-32 to allegedly teach the quoted feature. The Office Action appears to consider a *media stream* or *data stream* as equivalent to the claimed *data stream*. The cited passage describes the process of determining which coding algorithm to use for a particular media stream. In *Shaffer*, a coding algorithm is selected based on its required transfer rate and whether both communicating endpoints have the capability to encode/decode. Once a maximum allocated transfer rate has been determined, the BWAS server identifies the set of coding algorithms that require a transfer rate of less than or equal to the allocated rate. Next, the endpoints negotiate their capabilities to perform the encoding/decoding for each of the algorithms in the set of identified algorithms. Thus, *Shaffer* determines a single **maximum** transfer rate, not a plurality of transfer rates, as claimed. Furthermore, *Shaffer* negotiates a coding algorithm, not a transfer rate, as claimed. *Shaffer*'s negotiation is dependent on the algorithmic capability of the endpoints. The available bandwidth is used to filter the list of algorithms before negotiation starts.

Claim 1 also recites:

> "*in response to detecting that no data stream from said particular class is able to use* **bandwidth that was allocated to the terminated data stream**, *performing the steps of*
> *(a)* **selecting an existing data stream based,** *at least in part,* **on where the node that corresponds to the data class of the existing data stream is**, *within the hierarchical policy tree,* **relative to where the node of the class of the terminated data stream is**, *within said hierarchical policy tree*"

None of the cited references alone or in combination teach the bolded features.

Claim 1 recites a data stream terminating and determining how to re-allocate the bandwidth that was released by the terminated data stream. Claim 1 is distinguished over the cited art at least because, in the determination of where to re-allocate the released bandwidth, Claim 1 recites attempting to provide the freed bandwidth to a data stream belonging to the same data class as the terminated data stream. In particular, Claim 1 recites using the position in the policy tree of the data class to determine which data stream should be allocated the available bandwidth.

In contrast, *Packer*'s description of how to allocate excess bandwidth contains no teaching or suggestion of where the excess bandwidth comes from, nor does *Packer* teach or suggest that the source of the excess bandwidth is considered when determining how to re-allocate the newly available bandwidth.

The Office Action acknowledges that the combination of *Shaffer* and *Packer* does not disclose the quoted feature, and instead relies on *Vaid*. *Vaid* describes a policy tree comprising *flow classes* as intermediate nodes and *connections* representing the leaf nodes. *Vaid*'s connections carry data across a network, and thus may be analogous to the claimed data stream. The flow classes represent an aggregation of used and allocated bandwidth across all of the connections in each class' sub-tree. *Vaid* describes a set of **active** connections sharing bandwidth based on the position of each connection's class in the policy tree. However, none of

the set of active sibling connections corresponds to the claimed terminated data stream because a stream cannot be both terminated and active at the same time. *Vaid* also does not describe where the bandwidth comes from when determining how to allocate the bandwidth across nodes in the tree of flow classes, and thus, *Vaid* does not consider the class of the terminated connection in its determination of bandwidth allocation.

The Office Action relies on Fig. 3 and the passage at Col. 6, lines 47-52 to allegedly teach this quoted feature. The cited passage describes connections in sibling traffic flow classes as sharing bandwidth allocated to their parent node and describes the allocation of "excess" bandwidth. The policy tree may reflect the apportionment of bandwidth among children at any given node (meta-traffic class) in the tree. Sibling traffic classes share the bandwidth allocated to their parent node. However, there is a distinction between bandwidth **allocation** and bandwidth **usage**. When bandwidth is guaranteed to a traffic class, the full bandwidth is not always needed. Therefore, more bandwidth might be allocated than actually used by connections in that traffic class. In addition, in a lightly loaded system, a traffic class might use more bandwidth than is guaranteed. As a result, allocation policy and actual usage must be tracked separately. When a connection terminates, the freed bandwidth is 'passed up' through the tree via the terminated connection's parent flow class so that all ancestor nodes accurately reflect the updated bandwidth usage. If the freed bandwidth from the terminated connection represents excess bandwidth, then the allocation policy is applied top-down. In other words, the excess bandwidth is allocated starting at the root of the policy tree, and for each node that is allocated additional bandwidth, the allocation of bandwidth is performed recursively in each sub-tree.

As a result of the top-down allocation process, there is no teaching in *Vaid* that the bandwidth freed by a terminated flow in a particular traffic class is necessarily allocated based on where the terminated connection was in the policy tree or the relative position in the policy

tree of the terminated connection and the existing connection that is allocated the freed

bandwidth.

Applicant has identified several features of Claim 1 not found in any of the references,

and thus could not be provided in any combination of the references. For at least all these

reasons, Claim 1 is patentable under 35 U.S.C. § 103(a) over the combination of *Shaffer*, *Packer*,

and *Vaid*. Reconsideration and withdrawal of the rejection is respectfully requested.

Claims 21, 22, 23, and 24

In addition to features that make each of independent Claims 21, 22, 23, and 24

patentably distinct, each of Claims 21-24 includes essentially the same features as Claim 1 that

were shown above to be missing from the cited references both alone and in combination. Thus,

Claims 21, 22, 23, and 24 are patentable for at least the same reasons as Claim 1. Therefore,

Claims 21, 22, 23, and 24 are patentable under 35 U.S.C. § 103(a) over the combination of

Shaffer, *Packer*, and *Vaid*. Reconsideration and withdrawal of the rejection is respectfully

requested.

Dependent Claims

The dependent claims are believed to be allowable at least due to their incorporation of

limitations from their respective independent claims that have been shown to be patentable.

Further, the dependent claims introduce additional features that render them patentable over the

prior art. However, due to the fundamental differences already identified, separate arguments are

not provided at this time. Reconsideration and withdrawal of the rejection is respectfully

requested.

III.   CONCLUSIONS & MISCELLANEOUS

For the reasons set forth above, all of the pending claims are now in condition for allowance. The Examiner is respectfully requested to contact the undersigned by e-mail or telephone relating to any issue that would advance examination of the present application.

A petition for extension of time, to the extent necessary to make this reply timely filed, is hereby made. If applicable, a check for the petition for extension of time fee and other applicable fees is enclosed herewith. If any applicable fee is missing or insufficient, throughout the pendency of this application, the Commissioner is hereby authorized to charge any applicable fees and to credit any overpayments to our Deposit Account No. 50-1302.

Respectfully submitted,

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